

Team Id	PNT2022TMID34246
Project Name	Inventory Management System for Retailers
Batch No	B12-6A2E

PROJECT DEVELOPMENT PHASE - SPRINT 4

ManageSales.html

```

<html>

  <head>

    <meta charset="utf-8">

    <title>MyFlaskApp</title>

    <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.2.1/css/bootstrap.min.css">

  </head>

  <body>

    {% include 'includes/_navbar.html' %}

    <div class="container mt-4">

      {% include 'includes/_messages.html' %}

      {% block body %}{% endblock %}

    </div>

    <script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.2.1/js/bootstrap.min.js"></script>

  </body>

</html>

```

Addsales.html

```

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        {% block body %}{% endblock %}

    </div>

    <script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.2.1/js/bootstrap.min.js"></script>

</body>

</html>

```

edit_product.html

```

{% extends 'layout.html' %}

{% block body %}

<h1>Edit Product</h1>

{% from "includes/_formhelpers.html" import render_field %}

<form action="" method="POST">

    <div class="form-group">

        {{ render_field(form.product_id, class_="form-control") }}

    </div>

    <div class="form-group">

        {{ render_field(form.product_cost, class_="form-control") }}

    </div>

    <div class="form-group">

        {{ render_field(form.product_num, class_="form-control") }}

    </div>

```

```
<p><input type="submit" value="Update" class="btn btn-primary"></p>
</form>

{% endblock %}
```

product_movement.html

```
{% extends 'layout.html' %}

{% block body %}

    <h1>Product Movements</h1>

    <a class="btn btn-success" href="/add_product_movements">Add Product
Movements</a>

    <hr>

    <table class="table table-striped">

        <thead>

            <tr>

                <th>Movement ID</th>

                <th>Time</th>

                <th>From Location</th>

                <th>To Location</th>

                <th>Product ID</th>

                <th>Quantity</th>

            </tr>

        </thead>

        <tbody>

            {% for movement in movements %}

            <tr>

                <td>{{ movement.MOVEMENT_ID }}</td>

                <td>{{ movement.TIME }}</td>

                <td>{{ movement.FROM_LOCATION }}</td>

                <td>{{ movement.TO_LOCATION }}</td>
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        <td>{{ movement.PRODUCT_ID }}</td>
<td>{{ movement.QTY }}</td>

        <!--<td><a href="edit_product_movement/{{ movement.MOVEMENT_ID }}"
class="btn btn-primary pull-right">Edit</a></td>-->

        <td>

        <form action="{{ url_for('delete_product_movements',
id=movement.MOVEMENT_ID) }}" method="POST">

            <input type="hidden" name="method" value="DELETE">

            <input type="submit" value="Delete" class="btn btn-danger">

        </form>

    </td>

</tr>

{% endfor %}

</tbody>

</table>

{% endblock %}

```

app.py

```

from flask import Flask, render_template, flash, redirect, url_for, session, request, logging
from flask_mysqlldb import MySQL
from wtforms import Form, StringField, TextAreaField, PasswordField,
validators, SelectField, IntegerField
import ibm_db from passlib.hash import
sha256_crypt from functools import wraps
import win32api from sendgrid
import * #creating an app instance app = Flask(__name__)

conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=;PORT=;SECURITY=SSL;S
SL
ServerCertificate=DigiCertGlobalRootCA.crt;UID=;PWD=;","")

#Index @app.route('/') def index():

return render_template('home.html')

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#Products

@app.route('/products')
def products():
    sql = "SELECT * FROM
products"    stmt =
ibm_db.prepare(conn, sql)
result=ibm_db.execute(stmt)
products=[]    row =
ibm_db.fetch_assoc(stmt)
while(row):
    products.append(row)    row
= ibm_db.fetch_assoc(stmt)
products=tuple(products)
#print(products)    if result>0:
    return render_template('products.html', products = products)
    else:
        msg='No products found'    return
render_template('products.html', msg=msg)

#Locations

@app.route('/locations')
def locations():
    sql = "SELECT * FROM locations"
stmt = ibm_db.prepare(conn, sql)
result=ibm_db.execute(stmt)
locations=[]

    row = ibm_db.fetch_assoc(stmt)
while(row):

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```

        locations.append(row)
row = ibm_db.fetch_assoc(stmt)
locations=tuple(locations)
#print(locations)    if result>0:

    return render_template('locations.html', locations = locations)
else:

    msg='No locations found'    return
render_template('locations.html', msg=msg)
#Product Movements
@app.route('/product_movements')
def product_movements():
    sql = "SELECT * FROM
productmovements"    stmt =
ibm_db.prepare(conn, sql)
result=ibm_db.execute(stmt)    movements=[]
row = ibm_db.fetch_assoc(stmt)    while(row):
    movements.append(row)
row = ibm_db.fetch_assoc(stmt)
movements=tuple(movements)
#print(movements)
if result>0:
    return render_template('product_movements.html', movements = movements)
else:
    msg='No product movements found'    return
render_template('product_movements.html', msg=msg) #Register
Form Class class RegisterForm(Form):
    name = StringField('Name', [validators.Length(min=1, max=50)])
username = StringField('Username', [validators.Length(min=1, max=25)])
email = StringField('Email', [validators.length(min=6, max=50)])

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password = PasswordField('Password', [ validators.DataRequired(),
validators.EqualTo('confirm', message='Passwords do not match')
])

confirm = PasswordField('Confirm Password')

#user register

@app.route('/register', methods=['GET','POST'])
def register():

    form = RegisterForm(request.form)    if
request.method == 'POST' and form.validate():

        name = form.name.data        email = form.email.data        username =
form.username.data        password =
sha256_crypt.encrypt(str(form.password.data))    sql1="INSERT INTO
users(name, email, username, password) VALUES(?,?,?,?)"    stmt1 =
ibm_db.prepare(conn, sql1)    ibm_db.bind_param(stmt1,1,name)
ibm_db.bind_param(stmt1,2,email)    ibm_db.bind_param(stmt1,3,username)
ibm_db.bind_param(stmt1,4,password)    ibm_db.execute(stmt1)

        #for flash messages taking parameter and the category of message to be flashed
flash("You are now registered and can log in", "success")

        #when registration is successful redirect to home

        return redirect(url_for('login'))    return

render_template('register.html', form = form)

#User login

@app.route('/login', methods = ['GET', 'POST'])
def login():    if request.method == 'POST':

#Get form fields        username =
request.form['username']        password_candidate
= request.form['password']    sql1="Select * from
users where username = ?"    stmt1 =
ibm_db.prepare(conn, sql1)

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ibm_db.bind_param(stmt1,1,username)
result=ibm_db.execute(stmt1)
d=ibm_db.fetch_assoc(stmt1)

    if result > 0:
#Get the stored hash
data = d

        password = data['PASSWORD']                #compare
passwords      if sha256_crypt.verify(password_candidate,
password):

                #Passed
session['logged_in'] = True
session['username'] = username
flash("you are now logged in","success")
return redirect(url_for('dashboard'))

    else:

        error = 'Invalid Login'                return
render_template('login.html', error=error)

        #Close connection
cur.close()

else:

        error = 'Username not found'                return
render_template('login.html', error=error)                return
render_template('login.html')
#check if user logged in def
is_logged_in(f):    @wraps(f)
def wrap(*args, **kwargs):
if 'logged_in' in session:
return f(*args, **kwargs)

    else:

```



```

        flash('Unauthorized, Please
login','danger')        return
    redirect(url_for('login'))    return wrap

#Logout
@app.route('/logout') @is_logged_in def
logout():    session.clear()    flash("You are
now logged out", "success")    return
    redirect(url_for('login'))

#Dashboard
@app.route('/dashboard'
) @is_logged_in def
dashboard():

    sql2="SELECT product_id, location_id, qty FROM
product_balance"    sql3="SELECT location_id FROM locations"
    stmt2 = ibm_db.prepare(conn, sql2)

    stmt3 = ibm_db.prepare(conn,
sql3)
    result=ibm_db.execute(stmt2)
    ibm_db.execute(stmt3)
    products=[]    row =
    ibm_db.fetch_assoc(stmt2)
    while(row):
        products.append(row)        row
    = ibm_db.fetch_assoc(stmt2)
    products=tuple(products)
    locations=[]    row2 =
    ibm_db.fetch_assoc(stmt3)
    while(row2):

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        locations.append(row2)
row2 = ibm_db.fetch_assoc(stmt3)
locations=tuple(locations)    locs = []
for i in locations:
    locs.append(list(i.values())[0])
if result>0:
    return render_template('dashboard.html', products = products, locations = locs)
else:
    msg='No products found'    return
render_template('dashboard.html', msg=msg)
#Product Form Class
class
ProductForm(Form):
    product_id = StringField('Product ID', [validators.Length(min=1, max=200)])
    product_cost = StringField('Product Cost', [validators.Length(min=1, max=200)])
    product_num = StringField('Product Num', [validators.Length(min=1, max=200)])
#Add Product
@app.route('/add_product', methods=['GET', 'POST'])
@is_logged_in
def add_product():
    form = ProductForm(request.form)    if
request.method == 'POST' and form.validate():
    product_id = form.product_id.data    product_cost = form.product_cost.data
    product_num = form.product_num.data    sql1="INSERT INTO products(product_id,
    product_cost, product_num) VALUES(?,?,?)"    stmt1 = ibm_db.prepare(conn, sql1)
    ibm_db.bind_param(stmt1,1,product_id)    ibm_db.bind_param(stmt1,2,product_cost)
    ibm_db.bind_param(stmt1,3,product_num)    ibm_db.execute(stmt1)
    flash("Product Added", "success")    return redirect(url_for('products'))    return
render_template('add_product.html', form=form)

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#Edit Product

@app.route('/edit_product/<string:id>', methods=['GET', 'POST'])
@is_logged_in def
edit_product(id):

    sql1="Select * from products where product_id =
?"    stmt1 = ibm_db.prepare(conn, sql1)
ibm_db.bind_param(stmt1,1,id)
result=ibm_db.execute(stmt1)
product=ibm_db.fetch_assoc(stmt1)
print(product)    #Get form    form =
ProductForm(request.form)

#populate product form fields    form.product_id.data =
product['PRODUCT_ID']    form.product_cost.data =
str(product['PRODUCT_COST'])    form.product_num.data
= str(product['PRODUCT_NUM'])    if request.method ==
'POST' and form.validate():        product_id =
request.form['product_id']        product_cost =
request.form['product_cost']        product_num =
request.form['product_num']

    sql2="UPDATE products SET product_id=?,product_cost=?,product_num=?
WHERE product_id=?"    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,product_id)    ibm_db.bind_param(stmt2,2,product_cost)
ibm_db.bind_param(stmt2,3,product_num)    ibm_db.bind_param(stmt2,4,id)
ibm_db.execute(stmt2)    flash("Product Updated", "success")    return
redirect(url_for('products'))    return render_template('edit_product.html', form=form)

#Delete Product

@app.route('/delete_product/<string:id>', methods=['POST'])
@is_logged_in def
delete_product(id):

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        sql2="DELETE FROM products WHERE product_id=?"
        stmt2 = ibm_db.prepare(conn, sql2)
    ibm_db.bind_param(stmt2,1,id)
    ibm_db.execute(stmt2)
    flash("Product Deleted", "success")
    return redirect(url_for('products'))

#Location Form Class class
LocationForm(Form):
    location_id = StringField('Location ID', [validators.Length(min=1, max=200)])

#Add Location
@app.route('/add_location', methods=['GET', 'POST'])
@is_logged_in
def
add_location():
    form = LocationForm(request.form) if
request.method == 'POST' and form.validate():
    location_id = form.location_id.data    sql2="INSERT
into locations VALUES(?"    stmt2 =
    ibm_db.prepare(conn, sql2)
    ibm_db.bind_param(stmt2,1,location_id)
    ibm_db.execute(stmt2)    flash("Location Added",
"success")    return redirect(url_for('locations'))
    return render_template('add_location.html', form=form)

#Edit Location
@app.route('/edit_location/<string:id>', methods=['GET', 'POST'])
@is_logged_in def
edit_location(id):
    sql2="SELECT * FROM locations where location_id = ?"
    stmt2 = ibm_db.prepare(conn, sql2)

```

```

ibm_db.bind_param(stmt2,1,id)
result=ibm_db.execute(stmt2)
location=ibm_db.fetch_assoc(stmt2)

    #Get form    form =
    LocationForm(request.form)
    print(location)

#populate article form fields    form.location_id.data
= location['LOCATION_ID']    if request.method
== 'POST' and form.validate():

    location_id = request.form['location_id']    sql2="UPDATE
locations SET location_id=? WHERE location_id=?"    stmt2 =
ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,location_id)
ibm_db.bind_param(stmt2,2,id)    ibm_db.execute(stmt2)
flash("Location Updated", "success")    return
redirect(url_for('locations'))    return
render_template('edit_location.html', form=form)

#Delete Location

@app.route('/delete_location/<string:id>', methods=['POST'])

@is_logged_in def
delete_location(id):

    sql2="DELETE FROM locations WHERE
location_id=?"    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,id)    ibm_db.execute(stmt2)
flash("Location Deleted", "success")    return
redirect(url_for('locations'))

#Product Movement Form Class

class ProductMovementForm(Form):

```

```

        from_location = SelectField('From Location',
choices=[])    to_location = SelectField('To Location',
choices=[])    product_id = SelectField('Product ID',
choices=[])    qty = IntegerField('Quantity') class
CustomError(Exception):

    pass

#Add Product Movement

@app.route('/add_product_movements', methods=['GET', 'POST'])
@is_logged_in def
add_product_movements():

    form =
ProductMovementForm(request.form)
sql2="SELECT product_id FROM products"
sql3="SELECT location_id FROM locations"
stmt2 = ibm_db.prepare(conn, sql2)    stmt3 =
ibm_db.prepare(conn, sql3)
result=ibm_db.execute(stmt2)
ibm_db.execute(stmt3)    products=[]    row =
ibm_db.fetch_assoc(stmt2)    while(row):
        products.append(row)    row =
ibm_db.fetch_assoc(stmt2)
products=tuple(products)
locations=[]    row2 =
ibm_db.fetch_assoc(stmt3)
while(row2):
        locations.append(row2)
row2 = ibm_db.fetch_assoc(stmt3)

```

```

locations=tuple(locations)    prods = []
for p in products:

    prods.append(list(p.values())[0])
    locs = []    for i in locations:
        locs.append(list(i.values())[0])
    form.from_location.choices = [(l,l)
    for l in locs]
    form.from_location.choices.append(
    ("Main Inventory","Main
    Inventory"))
    form.to_location.choices = [(l,l) for l
    in locs]
    form.to_location.choices.append(("
    Main Inventory","Main Inventory"))
    form.product_id.choices = [(p,p) for
    p in prods]    if request.method ==
    'POST' and form.validate():
        from_location =
        form.from_location.data    to_location =
        form.to_location.data    product_id =
        form.product_id.data    qty =
        form.qty.data    if
        from_location==to_location:
            raise CustomError("Please Give different From and To Locations!!")    elif
        from_location=="Main Inventory":    sql2="SELECT * from product_balance
        where location_id=? and product_id=?"    stmt2 = ibm_db.prepare(conn, sql2)
        ibm_db.bind_param(stmt2,1,to_location)
        ibm_db.bind_param(stmt2,2,product_id)    result=ibm_db.execute(stmt2)

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result=ibm_db.fetch_assoc(stmt2)          print("-----")          print(result)
print("-----")          app.logger.info(result)          if result!=False:
if(len(result))>0:
    Quantity = result["QTY"]
q = Quantity + qty
sql2="UPDATE product_balance set
qty=? where location_id=? and
product_id=?"

    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,q)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)
ibm_db.execute(stmt2)

    sql2="INSERT into productmovements(from_location, to_location,
product_id, qty) VALUES(?, ?, ?, ?)"          stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)          ibm_db.bind_param(stmt2,4,qty)
ibm_db.execute(stmt2)

    else:
        sql2="INSERT into product_balance(product_id, location_id, qty) values(?, ?,
?)"          stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,product_id)
ibm_db.bind_param(stmt2,2,to_location)          ibm_db.bind_param(stmt2,3,qty)
ibm_db.execute(stmt2)

        sql2="INSERT into productmovements(from_location, to_location,
product_id, qty) VALUES(?, ?, ?, ?)"          stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)

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```

ibm_db.bind_param(stmt2,3,product_id)          ibm_db.bind_param(stmt2,4,qty)
ibm_db.execute(stmt2)

```

```

    sql = "select product_num from products where product_id=?"
stmt = ibm_db.prepare(conn, sql)
ibm_db.bind_param(stmt,1,product_id)
current_num=ibm_db.execute(stmt)          current_num =
ibm_db.fetch_assoc(stmt)          sql2="Update products set
product_num=? where product_id=?"          stmt2 =
ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,current_num['PRODUCT_NUM']-qty)
ibm_db.bind_param(stmt2,2,product_id)          ibm_db.execute(stmt2)
alert_num=current_num['PRODUCT_NUM']-qty
    if(alert_num<=0):
        alert("Please update the quantity of the product { }, Atleast { } number of
pieces must be added to finish the pending Product Movements!".format(product_id,-
alert_num))          elif to_location=="Main Inventory":          sql2="SELECT *
from product_balance where location_id=? and product_id=?"          stmt2 =
ibm_db.prepare(conn, sql2)          ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,product_id)          result=ibm_db.execute(stmt2)
result=ibm_db.fetch_assoc(stmt2)  app.logger.info(result)          if result!=False:
if(len(result))>0:
    Quantity = result["QTY"]
q = Quantity - qty
    sql2="UPDATE product_balance set qty=? where location_id=? and
product_id=?"
    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,q)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)          ibm_db.execute(stmt2)

```

```

        sql2="INSERT into productmovements(from_location, to_location,
product_id, qty) VALUES(?, ?, ?, ?)"          stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)          ibm_db.bind_param(stmt2,4,qty)
ibm_db.execute(stmt2)          flash("Product Movement Added", "success")
sql = "select product_num from products where product_id=?"          stmt =
ibm_db.prepare(conn, sql)          ibm_db.bind_param(stmt,1,product_id)
current_num=ibm_db.execute(stmt)          current_num = ibm_db.fetch_assoc(stmt)
sql2="Update products set product_num=? where product_id=?"          stmt2 =
ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,current_num['PRODUCT_NUM']+qty)
ibm_db.bind_param(stmt2,2,product_id)          ibm_db.execute(stmt2)
alert_num=q          if(alert_num<=0):
            alert("Please Add { } number of { } to { }
warehouse!".format(q,product_id,from_location))
        else:
            raise CustomError("There is no product named { } in
{ }.".format(product_id,from_location))          else: #will be executed if both
from_location and to_location are specified          f=0

        sql = "SELECT * from product_balance where location_id=? and
product_id=?"          stmt = ibm_db.prepare(conn, sql)
ibm_db.bind_param(stmt,1,from_location)
ibm_db.bind_param(stmt,2,product_id)          result=ibm_db.execute(stmt)
result = ibm_db.fetch_assoc(stmt) if result!=False:
        if(len(result))>0:
            Quantity = result["QTY"]
q = Quantity - qty
        sql2="UPDATE product_balance set qty=? where location_id=? and
product_id=?"

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        stmt2 = ibm_db.prepare(conn, sql2)
    ibm_db.bind_param(stmt2,1,q)
    ibm_db.bind_param(stmt2,2,from_location)
    ibm_db.bind_param(stmt2,3,product_id)
    ibm_db.execute(stmt2)

    f=1

    alert_num=q
    if(alert_num<=0):

        alert("Please Add { } number of { } to { }
warehouse!".format(q,product_id,from_location))

    else:

        raise CustomError("There is no product named { } in
{ }.".format(product_id,from_location))

    if(f==1):

        sql = "SELECT * from product_balance where location_id=? and
product_id=?"
        stmt = ibm_db.prepare(conn, sql)
    ibm_db.bind_param(stmt,1,to_location)

    ibm_db.bind_param(stmt,2,product_id)
    result=ibm_db.execute(stmt)
    result =
    ibm_db.fetch_assoc(stmt)
    if
    result!=False:
        if(len(result))>0:

            Quantity = result["QTY"]

    q = Quantity + qty

    sql2="UPDATE product_balance set qty=? where location_id=? and
product_id=?"

    stmt2 = ibm_db.prepare(conn, sql2)
    ibm_db.bind_param(stmt2,1,q)
    ibm_db.bind_param(stmt2,2,to_location)

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```

ibm_db.bind_param(stmt2,3,product_id)
ibm_db.execute(stmt2)

        else:

            sql2="INSERT into product_balance(product_id, location_id,
qty) values(?, ?, ?)"            stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,product_id)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,qty)            ibm_db.execute(stmt2)

            sql2="INSERT into productmovements(from_location, to_location,
product_id, qty) VALUES(?, ?, ?, ?)"            stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)            ibm_db.bind_param(stmt2,4,qty)
ibm_db.execute(stmt2)

        flash("Product Movement Added", "success")

render_template('products.html',form=form)    return

redirect(url_for('product_movements'))    return

render_template('add_product_movements.html', form=form)

#Delete Product Movements

@app.route('/delete_product_movements/<string:id>', methods=['POST'])

@is_logged_in def

delete_product_movements(id):

    sql2="DELETE FROM productmovements WHERE movement_id=?"

    stmt2 = ibm_db.prepare(conn, sql2)

ibm_db.bind_param(stmt2,1,id)

ibm_db.execute(stmt2)    flash("Product

Movement Deleted", "success")    return

redirect(url_for('product_movements')) if

```

```
__name__ == '__main__': app.secret_key =  
"secret123"
```

```
    #when the debug mode is on, we do not need to restart the server again and again  
app.run(debug=True)
```

config.py

```
from flask import Flask, render_template, flash, redirect, url_for, session, request, logging  
from flask_mysql import MySQL
```

```
from wtforms import Form, StringField, TextAreaField, PasswordField,  
validators, SelectField, IntegerField import ibm_db from passlib.hash import  
sha256_crypt from functools import wraps import win32api
```

```
from sendgrid import *
```

```
#creating an app instance
```

```
app = Flask(__name__)
```

```
conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=;PORT=;SECURITY=SSL;S  
SL
```

```
ServerCertificate=DigiCertGlobalRootCA.crt;UID=;PWD=;",",")
```

```
#Index @app.route('/') def index():
```

```
    return render_template('home.html')
```

```
#Products
```

```
@app.route('/products')
```

```
def products():
```

```
    sql = "SELECT * FROM
```

```
products"    stmt =
```

```
ibm_db.prepare(conn, sql)
```

```
result=ibm_db.execute(stmt)
```

```
products=[]    row =
```

```

ibm_db.fetch_assoc(stmt)
while(row):
    products.append(row)    row
= ibm_db.fetch_assoc(stmt)
products=tuple(products)
#print(products)    if result>0:
    return render_template('products.html', products = products)
else:
    msg='No products found'    return
render_template('products.html', msg=msg)
#Locations
@app.route('/locations')
def locations():
    sql = "SELECT * FROM
locations"    stmt =
ibm_db.prepare(conn, sql)
result=ibm_db.execute(stmt)
locations=[]    row =
ibm_db.fetch_assoc(stmt)
while(row):
    locations.append(row)
row = ibm_db.fetch_assoc(stmt)
locations=tuple(locations)
#print(locations)    if result>0:
    return render_template('locations.html', locations = locations)
else:
    msg='No locations found'    return
render_template('locations.html', msg=msg)

```

```

#Product Movements

@app.route('/product_movements')
def product_movements():
    sql = "SELECT * FROM
productmovements"    stmt =
ibm_db.prepare(conn, sql)
result=ibm_db.execute(stmt)    movements=[]
row = ibm_db.fetch_assoc(stmt)    while(row):
    movements.append(row)
row = ibm_db.fetch_assoc(stmt)
movements=tuple(movements)
#print(movements)
if result>0:
    return render_template('product_movements.html', movements = movements)
else:
    msg='No product movements found'    return
render_template('product_movements.html', msg=msg)

#Register Form Class
class
RegisterForm(Form):
    name = StringField('Name', [validators.Length(min=1, max=50)])
    username = StringField('Username', [validators.Length(min=1, max=25)])
    email = StringField('Email', [validators.length(min=6, max=50)])
    password = PasswordField('Password', [    validators.DataRequired(),
validators.EqualTo('confirm', message='Passwords do not match')
    ])
    confirm = PasswordField('Confirm Password')

#user register

```

```

@app.route('/register', methods=['GET','POST'])
def register():
    form = RegisterForm(request.form)    if
request.method == 'POST' and form.validate():
        name = form.name.data        email = form.email.data        username =
form.username.data        password = sha256_crypt.encrypt(str(form.password.data))
sql1="INSERT INTO users(name, email, username, password) VALUES(?,?,?,?)"
stmt1 = ibm_db.prepare(conn, sql1)        ibm_db.bind_param(stmt1,1,name)
ibm_db.bind_param(stmt1,2,email)        ibm_db.bind_param(stmt1,3,username)

        ibm_db.bind_param(stmt1,4,password)
ibm_db.execute(stmt1)

        #for flash messages taking parameter and the category of message to be
        flashed        flash("You are now registered and can log in", "success")
#when registration is successful redirect to home        return
redirect(url_for('login'))    return render_template('register.html', form = form)
#User login
@app.route('/login', methods = ['GET', 'POST'])
def login():
    if request.method == 'POST':        #Get form
fields        username = request.form['username']
password_candidate = request.form['password']
sql1="Select * from users where username = ?"
stmt1 = ibm_db.prepare(conn, sql1)
ibm_db.bind_param(stmt1,1,username)
result=ibm_db.execute(stmt1)
d=ibm_db.fetch_assoc(stmt1)
        if result > 0:

```



```

        #Get the stored hash
data = d

        password = data['PASSWORD']

        #compare passwords        if
sha256_crypt.verify(password_candidate, password):

        #Passed        session['logged_in']

= True        session['username'] = username
flash("you are now logged in", "success")
return redirect(url_for('dashboard'))

        else:

            error = 'Invalid Login'        return
render_template('login.html', error=error)

        #Close
connection
cur.close()        else:

            error = 'Username not found'        return
render_template('login.html', error=error)        return
render_template('login.html') #check if user logged in
def is_logged_in(f):    @wraps(f)    def wrap(*args,
**kwargs):        if 'logged_in' in session:
return f(*args, **kwargs)

        else:

            flash('Unauthorized, Please
login', 'danger')        return
redirect(url_for('login'))        return wrap
#Logout
@app.route('/logout') @is_logged_in def
logout():    session.clear()    flash("You are

```

```

now logged out", "success")    return
redirect(url_for('login'))

#Dashboard

@app.route('/dashboard')

@is_logged_in

def dashboard():

    sql2="SELECT product_id, location_id, qty FROM
product_balance"    sql3="SELECT location_id FROM locations"
stmt2 = ibm_db.prepare(conn, sql2)    stmt3 = ibm_db.prepare(conn,
sql3)    result=ibm_db.execute(stmt2)    ibm_db.execute(stmt3)
products=[]    row = ibm_db.fetch_assoc(stmt2)    while(row):

        products.append(row)        row
= ibm_db.fetch_assoc(stmt2)
products=tuple(products)
locations=[]    row2 =
ibm_db.fetch_assoc(stmt3)
while(row2):

    locations.append(row2)
row2 = ibm_db.fetch_assoc(stmt3)
locations=tuple(locations)    locs = []
for i in locations:

    locs.append(list(i.values())[0])
if result>0:

    return render_template('dashboard.html', products = products, locations = locs)
else:

    msg='No products found'    return
render_template('dashboard.html', msg=msg)

#Product Form Class

class ProductForm(Form):

```

```

    product_id = StringField('Product ID', [validators.Length(min=1, max=200)])
product_cost = StringField('Product Cost', [validators.Length(min=1, max=200)])
product_num = StringField('Product Num', [validators.Length(min=1, max=200)])

#Add Product

@app.route('/add_product', methods=['GET', 'POST'])
@is_logged_in
def add_product():
    form = ProductForm(request.form)    if
request.method == 'POST' and form.validate():
    product_id = form.product_id.data
product_cost = form.product_cost.data
product_num = form.product_num.data

    sql1="INSERT INTO products(product_id, product_cost, product_num)
VALUES(?,?,?)"

    stmt1 = ibm_db.prepare(conn, sql1)
ibm_db.bind_param(stmt1,1,product_id)
ibm_db.bind_param(stmt1,2,product_cost)
ibm_db.bind_param(stmt1,3,product_num)
ibm_db.execute(stmt1)    flash("Product Added",
"success")    return redirect(url_for('products'))
return render_template('add_product.html', form=form)

#Edit Product

@app.route('/edit_product/<string:id>', methods=['GET', 'POST'])
@is_logged_in def
edit_product(id):
    sql1="Select * from products where product_id = ?"
stmt1 = ibm_db.prepare(conn, sql1)
ibm_db.bind_param(stmt1,1,id)

```

```

result=ibm_db.execute(stmt1)

product=ibm_db.fetch_assoc(stmt1)

    print(product)    #Get form    form =
ProductForm(request.form) #populate product form fields
form.product_id.data = product['PRODUCT_ID']
form.product_cost.data = str(product['PRODUCT_COST'])
form.product_num.data = str(product['PRODUCT_NUM'])
if request.method == 'POST' and form.validate():
product_id = request.form['product_id']    product_cost =
request.form['product_cost']    product_num =
request.form['product_num']

    sql2="UPDATE products SET product_id=?,product_cost=?,product_num=?
WHERE product_id=?"    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,product_id)    ibm_db.bind_param(stmt2,2,product_cost)
ibm_db.bind_param(stmt2,3,product_num)    ibm_db.bind_param(stmt2,4,id)
ibm_db.execute(stmt2)    flash("Product Updated", "success")    return
redirect(url_for('products'))    return render_template('edit_product.html', form=form)

#Delete Product

@app.route('/delete_product/<string:id>', methods=['POST'])
@is_logged_in def
delete_product(id):
sql2="DELETE
FROM products
WHERE
product_id=?"

    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,id)
ibm_db.execute(stmt2)

```

```

flash("Product Deleted", "success")

return redirect(url_for('products'))

#Location Form Class

class

LocationForm(Form):

    location_id = StringField('Location ID', [validators.Length(min=1, max=200)])

#Add Location

@app.route('/add_location', methods=['GET', 'POST'])

@is_logged_in

def

add_location():

    form = LocationForm(request.form)    if

request.method == 'POST' and form.validate():

location_id = form.location_id.data        sql2="INSERT

into locations VALUES(?)"        stmt2 =

ibm_db.prepare(conn, sql2)

ibm_db.bind_param(stmt2,1,location_id)

ibm_db.execute(stmt2)        flash("Location Added",

"success")        return redirect(url_for('locations'))

return render_template('add_location.html', form=form)

#Edit Location

@app.route('/edit_location/<string:id>', methods=['GET', 'POST'])

@is_logged_in def

edit_location(id):

    sql2="SELECT * FROM locations where location_id = ?"

stmt2 = ibm_db.prepare(conn, sql2)

ibm_db.bind_param(stmt2,1,id)    result=ibm_db.execute(stmt2)

location=ibm_db.fetch_assoc(stmt2)

```

```

    #Get form    form =
LocationForm(request.form)
print(location)

    #populate article form fields    form.location_id.data =
location['LOCATION_ID'] if request.method == 'POST' and
form.validate():    location_id = request.form['location_id']
sql2="UPDATE locations SET location_id=? WHERE location_id=?"
stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,location_id)
ibm_db.bind_param(stmt2,2,id)    ibm_db.execute(stmt2)
flash("Location Updated", "success")    return
redirect(url_for('locations'))    return
render_template('edit_location.html', form=form)

#Delete Location

@app.route('/delete_location/<string:id>', methods=['POST'])
@is_logged_in def
delete_location(id):

    sql2="DELETE FROM locations WHERE
location_id=?"    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,id)    ibm_db.execute(stmt2)
flash("Location Deleted", "success")    return
redirect(url_for('locations'))

#Product Movement Form Class
class ProductMovementForm(Form):

    from_location = SelectField('From Location',
choices=[])    to_location = SelectField("To Location",
choices=[])    product_id = SelectField('Product ID',
choices=[])    qty = IntegerField('Quantity') class
CustomError(Exception):

```

```

    pass

#Add Product Movement

@app.route('/add_product_movements', methods=['GET', 'POST'])
@is_logged_in def
add_product_movements():

    form =
    ProductMovementForm(request.form)

    sql2="SELECT product_id FROM products"
    sql3="SELECT location_id FROM locations"
    stmt2 = ibm_db.prepare(conn, sql2)    stmt3 =
    ibm_db.prepare(conn, sql3)
    result=ibm_db.execute(stmt2)
    ibm_db.execute(stmt3)    products=[]    row =
    ibm_db.fetch_assoc(stmt2)    while(row):
        products.append(row)        row
    = ibm_db.fetch_assoc(stmt2)
    products=tuple(products)
    locations=[]    row2 =
    ibm_db.fetch_assoc(stmt3)
    while(row2):
        locations.append(row2)
    row2 = ibm_db.fetch_assoc(stmt3)
    locations=tuple(locations)    prods = []
    for p in products:

    prods.append(list(p.values())[0])
    locs = []    for i in locations:
        locs.append(list(i.values())[0]) form.from_location.choices = [(l,l) for l
in locs]    form.from_location.choices.append(("Main Inventory","Main

```

```

Inventory"))    form.to_location.choices = [(l,l) for l in locs]
form.to_location.choices.append(("Main Inventory","Main Inventory"))
form.product_id.choices = [(p,p) for p in prods]    if request.method ==
'POST' and form.validate():
    from_location =
form.from_location.data    to_location =
form.to_location.data    product_id =
form.product_id.data    qty =
form.qty.data    if
from_location==to_location:
    raise CustomError("Please Give different From and To Locations!!")

    elif from_location=="Main Inventory":    sql2="SELECT * from
product_balance where location_id=? and product_id=?"    stmt2 =
ibm_db.prepare(conn, sql2)    ibm_db.bind_param(stmt2,1,to_location)
ibm_db.bind_param(stmt2,2,product_id)    result=ibm_db.execute(stmt2)
result=ibm_db.fetch_assoc(stmt2)    print("-----")    print(result)

    print("-----")
app.logger.info(result)
if result!=False:
if(len(result))>0:
    Quantity = result["QTY"]
q = Quantity + qty
    sql2="UPDATE product_balance set qty=? where location_id=? and
product_id=?"
    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,q)
ibm_db.bind_param(stmt2,2,to_location)

```



```

ibm_db.bind_param(stmt2,3,product_id)
ibm_db.execute(stmt2)

    sql2="INSERT into productmovements(from_location, to_location,
product_id, qty) VALUES(?, ?, ?, ?)"          stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)          ibm_db.bind_param(stmt2,4,qty)
ibm_db.execute(stmt2)

    else:

        sql2="INSERT into product_balance(product_id, location_id, qty) values(?, ?,
?)"          stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,product_id)
ibm_db.bind_param(stmt2,2,to_location)          ibm_db.bind_param(stmt2,3,qty)
ibm_db.execute(stmt2)

        sql2="INSERT into productmovements(from_location, to_location, product_id,
qty) VALUES(?, ?, ?, ?)"

        stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)
ibm_db.bind_param(stmt2,4,qty)          ibm_db.execute(stmt2)

sql = "select product_num from products where product_id=?"
stmt = ibm_db.prepare(conn, sql)
ibm_db.bind_param(stmt,1,product_id)
current_num=ibm_db.execute(stmt)          current_num =
ibm_db.fetch_assoc(stmt)          sql2="Update products set
product_num=? where product_id=?"          stmt2 =
ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,current_num['PRODUCT_NUM']-qty)

```

```

ibm_db.bind_param(stmt2,2,product_id)      ibm_db.execute(stmt2)
alert_num=current_num['PRODUCT_NUM']-qty

if(alert_num<=0):

    alert("Please update the quantity of the product { }, Atleast { } number of
pieces must be added to finish the pending Product Movements!".format(product_id,-
alert_num))      elif to_location=="Main Inventory":      sql2="SELECT *
from product_balance where location_id=? and product_id=?"      stmt2 =
ibm_db.prepare(conn, sql2)      ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,product_id)      result=ibm_db.execute(stmt2)
result=ibm_db.fetch_assoc(stmt2)  app.logger.info(result)      if result!=False:

    if(len(result))>0:

        Quantity = result["QTY"]
q = Quantity - qty

    sql2="UPDATE product_balance set qty=? where location_id=? and
product_id=?"

    stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,q)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)
ibm_db.execute(stmt2)

    sql2="INSERT into productmovements(from_location, to_location,
product_id, qty) VALUES(?, ?, ?, ?)"      stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)      ibm_db.bind_param(stmt2,4,qty)
ibm_db.execute(stmt2)      flash("Product Movement Added", "success")
sql = "select product_num from products where product_id=?"      stmt =
ibm_db.prepare(conn, sql)      ibm_db.bind_param(stmt,1,product_id)
current_num=ibm_db.execute(stmt)      current_num = ibm_db.fetch_assoc(stmt)

```

```

sql2="Update products set product_num=? where product_id=?"          stmt2 =
ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,current_num['PRODUCT_NUM']+qty)
ibm_db.bind_param(stmt2,2,product_id)          ibm_db.execute(stmt2)
alert_num=q

        if(alert_num<=0):
            alert("Please Add { } number of { } to { }
warehouse!".format(q,product_id,from_location))
        else:
            raise CustomError("There is no product named { } in
{ }.".format(product_id,from_location))          else: #will be executed if both
from_location and to_location are specified
            f=0
            sql = "SELECT * from product_balance where location_id=? and
product_id=?"          stmt = ibm_db.prepare(conn, sql)
ibm_db.bind_param(stmt,1,from_location)
ibm_db.bind_param(stmt,2,product_id)          result=ibm_db.execute(stmt)
result = ibm_db.fetch_assoc(stmt) if result!=False:
            if(len(result))>0:
                Quantity = result["QTY"]
q = Quantity - qty
            sql2="UPDATE product_balance set qty=? where location_id=? and
product_id=?"
            stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,q)
ibm_db.bind_param(stmt2,2,from_location)
ibm_db.bind_param(stmt2,3,product_id)
ibm_db.execute(stmt2)

```

```

        f=1

    alert_num=q

    if(alert_num<=0):

        alert("Please Add { } number of { } to { }
warehouse!".format(q,product_id,from_location))

    else:

        raise CustomError("There is no product named { } in
{ }.".format(product_id,from_location))

    if(f==1):

        sql = "SELECT * from product_balance where location_id=? and
product_id=?"          stmt = ibm_db.prepare(conn, sql)
    ibm_db.bind_param(stmt,1,to_location)
    ibm_db.bind_param(stmt,2,product_id)          result=ibm_db.execute(stmt)
    result = ibm_db.fetch_assoc(stmt)          if result!=False:
    if(len(result))>0:

        Quantity = result["QTY"]

    q = Quantity + qty

    sql2="UPDATE product_balance set qty=? where location_id=? and
product_id=?"

    stmt2 = ibm_db.prepare(conn, sql2)

    ibm_db.bind_param(stmt2,1,q)
    ibm_db.bind_param(stmt2,2,to_location)
    ibm_db.bind_param(stmt2,3,product_id)
    ibm_db.execute(stmt2)

    else:

        sql2="INSERT into product_balance(product_id, location_id,
qty) values(?, ?, ?)"          stmt2 = ibm_db.prepare(conn, sql2)
    ibm_db.bind_param(stmt2,1,product_id)
    ibm_db.bind_param(stmt2,2,to_location)
    ibm_db.bind_param(stmt2,3,qty)          ibm_db.execute(stmt2)

```

```

        sql2="INSERT into productmovements(from_location, to_location,
product_id, qty) VALUES(?, ?, ?, ?)"          stmt2 = ibm_db.prepare(conn, sql2)
ibm_db.bind_param(stmt2,1,from_location)
ibm_db.bind_param(stmt2,2,to_location)
ibm_db.bind_param(stmt2,3,product_id)          ibm_db.bind_param(stmt2,4,qty)
ibm_db.execute(stmt2)  flash("Product Movement Added", "success")
render_template('products.html',form=form)      return
redirect(url_for('product_movements'))  return
render_template('add_product_movements.html', form=form)

#Delete Product Movements

@app.route('/delete_product_movements/<string:id>', methods=['POST'])
@is_logged_in def
delete_product_movements(id):

    sql2="DELETE FROM productmovements WHERE movement_id=?"

    stmt2 = ibm_db.prepare(conn, sql2)

ibm_db.bind_param(stmt2,1,id)
ibm_db.execute(stmt2)

    flash("Product Movement Deleted",
"success")  return
redirect(url_for('product_movements')) if
__name__ == '__main__':  app.secret_key =
"secret123"

    #when the debug mode is on, we do not need to restart the server again and again
app.run(debug=True)

```